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Evaluation of herbicide systems in corn

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Evaluation of herbicide systems in corn

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Weed Science

Iowa State University

Evaluation of herbicide systems in corn

Trial ID: 01-KC-systems
Location: Kanawha

Study Dir.: Pringnitz
Investigator: Owen/Hartzler/Pringnitz

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
3.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
4.	AMATU	WATERHEMP, TALL	AMARANTHUS TUBERCULATOS (MOQ.) J.SAUER

Crop 1: Corn **Variety:** Golden Harvest 8562
Planting Date: May-14-01 **Planting Method:** John Deere 7001
Rate: 29900 seeds/acre **Depth:** 1.71 in
Row Spacing: 30 inch **Seed Bed:** moist
Soil Temperature: 67 F **Soil Moisture:** dry to moist

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 30 FT **Reps:** 3
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	soybeans	Roundup Ultra	2000

MAINTENANCE

Field Prep./Maintenance: 2 passes field cultivator - spring 2001
Fertility: 250 lbs of 18-46-0 and 249 lbs of 82-0-0 in Fall 2000.

SOIL DESCRIPTION

% OM: 6.4 **Texture:** clay loam
pH: 6.95 **Soil Name:** Canisteo, Nicollet

Closest Weather Station: Kanawha **Distance:** 1 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	May-14-01	Jun-11-01
Time of Day:	2pm	10am
Application Method:	TerraPro	TerraPro
Application Timing:	PRE	POST
Applic. Placement:	broadcast	broadcast
Air Temp., Unit:	87 F	85 F
% Relative Humidity:	35	59
Wind Velocity, Unit:	17 mph	10 mph
Soil Temp., Unit:	67 F	76 F
Soil Moisture:	dry	dry
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	Corn planting	Corn V3
Stage Scale:	DESC	
Height, Unit:	0 in	6 IN

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	CHEAL 0	CHEAL 0.5-1.5
Stage Scale:	IN	IN
Density, Unit:	0 FT2	117 FT2
Weed 2 Code, Stage:	SETFA	SETFA 2
Stage Scale:	IN	IN
Density, Unit:	0 FT2	2 FT2
Weed 3 Code, Stage:	ABUTH	ABUTH 3
Stage Scale:		leaf / 1"
Density, Unit:		3 FT2
Weed 4 Code, Stage:	AMATU	AMATU 0.5-1.0
Stage Scale:		IN
Density, Unit:		172 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	TerraPro	TerraPro
Operating Pressure:	32	32
Nozzle Type:	flat-fan	flat-fan
Nozzle Size:	TT11002	TT11002
Nozzle Spacing, Unit:	20 in	20 inch
Boom Length, Unit:	10 ft	10 ft
Boom Height, Unit:	15 in	15 in
Ground Speed, Unit:	2.6 mph	2.6 mph
Carrier:	water	water
Spray Volume, Unit:	20	20
Propellant:	CO2	CO2
Tank Mix (Y/N):	Y	Y

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Weed Code Rating Data Type Rating Unit Rating Date					SETFA % control percent Jun-11-01	ABUTH % control percent Jun-11-01	CHEAL % control percent Jun-11-01	AMATU % control percent Jun-11-01	SETFA control percent Jul-10-01	ABUTH control percent Jul-10-01	CHEAL control percent Jul-10-01	AMATU control percent Jul-10-01
Trt No.	Treatment Name	Rate Rate Unit	Grow Stg	Appl Code								
1	Dual II Magnum Callisto	2 PT/A 6 FL OZ/A	pre pre	A A	94.0 a	97.7 a	99.0 a	99.0 a	93.3 a	99.0 a	99.0 a	97.7 a
2	Dual II Magnum Callisto Atrazine	2 PT/A 6 FL OZ/A 1 LB A/A	pre pre pre	A A A	96.0 a	97.7 a	99.0 a	99.0 a	97.7 a	99.0 a	99.0 a	99.0 a
3	Balance Pro Surpass Atrazine	2.25 FL OZ/A 1.25 PT/A 1 LB A/A	pre pre pre	A A A	97.7 a	96.0 ab	97.7 ab	99.0 a	97.7 a	94.7 a	99.0 a	97.7 a
4	Dual II Magnum Callisto Crop Oil Conc Fertilizer - 28% UAN	2 PT/A 3 FL OZ/A 1 % V/V 2.5 % V/V	pre post post post	A B B B	93.3 a	76.7 c	70.0 c	91.3 ab	63.3 a	60.0 a	66.0 a	66.0 a
5	Outlook Distinct Non-ionic surfactant Fertilizer - AMS	16 FL OZ/A 3 OZ/A 0.25 % V/V 3 LB/A	pre post post post	A B B B	95.0 a	83.3 abc	71.7 c	88.3 b	94.3 a	91.3 a	86.7 a	86.7 a
6	Harness Xtra Distinct Non-ionic surfactant Fertilizer - AMS	1 QT/A 3 OZ/A 0.25 % V/V 3 LB/A	pre post post post	A B B B	99.0 a	86.7 abc	95.0 ab	97.7 a	96.0 a	88.3 a	97.7 a	85.0 a
7	Bicep Lite II Magnum Hornet WDG	2.6 PT/A 2.4 OZ/A	pre pre	A A	97.7 a	93.0 ab	94.7 ab	97.7 a	90.0 a	88.0 a	93.0 a	86.7 a
8	Dual II Magnum Northstar Non-ionic surfactant Fertilizer - AMS	1.7 PT/A 5 OZ/A 0.25 % V/V 3 LB/A	pre post post post	A B B B	97.3 a	88.3 abc	86.7 ab	93.6 ab	90.4 a	97.9 a	96.9 a	88.3 a
9	Degree Aim Atrazine Non-ionic surfactant	4 PT/A 0.33 OZ/A 1 LB A/A 0.25 % V/V	pre post post post	A B B B	99.0 a	94.7 ab	94.7 ab	99.0 a	94.3 a	93.3 a	96.0 a	93.3 a
10	Axiom Buctril + Atrazine	20 OZ/A 2 PT/A	pre post	A B	99.0 a	93.0 ab	97.7 ab	99.0 a	96.0 a	86.7 a	97.7 a	90.0 a
11	Outlook Marksman Non-ionic surfactant Fertilizer - AMS	16 FL OZ/A 3.5 PT/A 0.25 % V/V 2.5 LB/A	pre post post post	A B B B	94.7 a	88.3 abc	94.7 ab	97.7 a	96.3 a	89.7 a	99.0 a	93.3 a
12	Dual II Magnum Basis Gold Crop Oil Conc Fertilizer - 28% UAN	1 PT/A 14 OZ/A 1 % V/V 2 QT/A	pre post post post	A B B B	99.0 a	81.7 bc	85.0 b	91.3 ab	97.7 a	91.7 a	97.7 a	88.3 a
13	Basis Gold Crop Oil Conc Fertilizer - 28% UAN	14 OZ/A 1 % V/V 2 QT/A	post post post	B B B	0.0 b	0.0 d	0.0 d	0.0 c	97.7 a	86.7 a	97.7 a	85.0 a
14	Accent Gold Crop Oil Conc Fertilizer - 28% UAN	2.9 OZ/A 1 % V/V 2 QT/A	post post post	B B B	0.0 b	0.0 d	0.0 d	0.0 c	96.0 a	94.7 a	97.7 a	66.7 a
15	Celebrity Plus Non-ionic surfactant Fertilizer - 28% UAN	4.75 OZ/A 0.25 % V/V 2 QT/A	post post post	B B B	0.0 b	0.0 d	0.0 d	0.0 c	99.0 a	89.7 a	92.7 a	80.0 a
16	Leadoff Accent Gold Atrazine Crop Oil Conc Fertilizer - 28% UAN	1.9 PT/A 1.5 OZ/A 0.5 LB A/A 1 % V/V 2 QT/A	pre post post post post	A B B B B	92.7 a	88.3 abc	95.0 ab	95.0 ab	93.0 a	94.7 a	99.0 a	90.0 a

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Trt No.	Treatment Name	Rate Rate	Grow Unit	Appl Stg	Code							
17	Leadoff	1.9	PT/A	pre	A	94.7 a	91.7 ab	93.0 ab	96.3 a	94.7 a	91.3 a	97.7 a
	Accent Gold	1.5	OZ/A	post	B							
	Atrazine	0.5	LB A/A	post	B							
	Crop Oil Conc	1.25	QT/A	post	B							
	Fertilizer - 28% UAN	2	QT/A	post	B							
18	Guardsman	1.9	PT/A	pre	A	91.0 a	86.7 abc	91.3 ab	96.3 a	91.3 a	90.0 a	96.0 a
	Celebrity Plus	2.5	OZ/A	post	B							
	Fertilizer - 28% UAN	2	QT/A	post	B							
	Non-ionic surfactant	0.25	% V/V	post	B							
19	Leadoff	1.9	PT/A	pre	A	96.6 a	88.9 abc	94.8 ab	97.3 a	93.3 a	91.6 a	95.7 a
	Steadfast	0.5	OZ/A	post	B							
	Clarity	4	FL OZ/A	post	B							
	Crop Oil Conc	1	QT/A	post	B							
	Fertilizer - 28% UAN	2	QT/A	post	B							
20	Untreated					0.0 b	0.0 d	0.0 d	0.0 c	0.0 b	0.0 b	0.0 b
LSD (P=.05)						7.87	8.53	7.71	4.96	21.80	22.14	22.29
Standard Deviation						4.77	5.17	4.68	3.00	13.21	13.41	13.51
CV						6.2	7.22	6.41	3.91	14.91	15.62	14.98

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)